Site Selection

There views are of Lunar Lake, Nevada, USA, which is our primary experiment site.

MISR flies at 785 km and makes use of nine cameras to provide views of the Earth at 0, 261, 161.0, 60.0, and 70.3 degrees, both fore and at of the spacecraft. It uses 1846 detected elements to sweep out 364 km at a time. The spectral bands are at 666, 550, 672, and 866 ms.





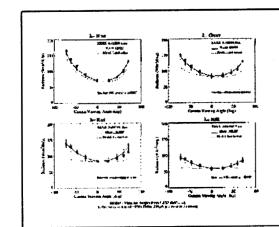
AirMISR is built using an Engineering Model MISR cameta. It is gimbaled to provide the same nine view angles as MISR. Flying at 20 km, it produces images which are 9 x

Surface measurements

Shown here are the PARABOR A III and Analytical Spectral Devices (ASD) field spectrometer. The PARABOLA acquires continuous samples of radiances, within a 5 degree coner, and covering both the upwelling and downwelling homispheres. These data have multiple uses. For Vicarious calibration, we use the PARABOLA to determine the hemispheric seffectance distribution function (HDRF), or angluar reflectance properties of the surface. The ASD samples upwelling only in the natific view direction, but allows us to do so over a large spatial area, as compared to the stationary PARABOLA.







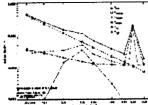
Top-ofatmosphere radiance comparison

Shows here is the radiance competent from the vications californian experiment of December 11, 1994. The said time shows refinence computed using the surface and atmosphesic measurements. The X symbols show the radiances measured by AirMSR, based upon its laboratory calibration. Agrement is within a few precent for most bands and view angles.









Shown, from left to right, are the Reugan sumphotometer, Cimel, and MFRSR radiometers. The Reugan is used to measure imainteneous total, newsol, and orone optical depths. The Cimel and MFRSR instruments allow us to consist a physical phy

Atmospheric measurements

Summary

Results from the MISR vications calibration experiments will be merged with results using data acquired with the on-board calibratur. This will be done considering their uncertainties. It is believed that the MISR on-board calibration is good in within 5% (at a 1 signa confidered,). The vications calibration results are uncertain to 5%, however, they provide as important cons-check, and reduce systematic

This and other MISR validation activities can be tracked an our web site. See http://www.snios.jpl.naos.gov





MAISR VICARIOUS CACIPIRATION

Site selection

Uniform, bright scenes are used to calibrate MISR as it flies by and images the Earth. These views are of Lunar Lake, Nevada, USA, which is our primary experiment site.

MISR

flies at 705 km and makes use of nine cameras to provide views of the Earth at 0, 26.1, 45.6, 60.0, and 70.5 degrees, both fore and aft of the spacecraft. It uses 1504 detector elements to sweep out 364 km at a time. The spectral bands are at 446, 558, 672, and 866 nm.

AirMISR

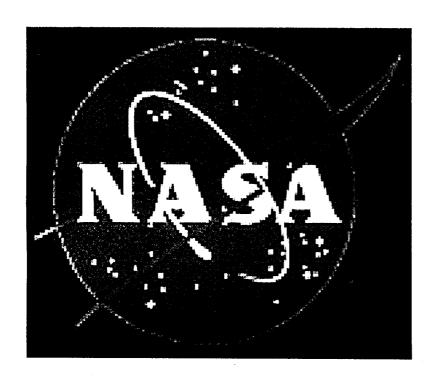
grimbaled

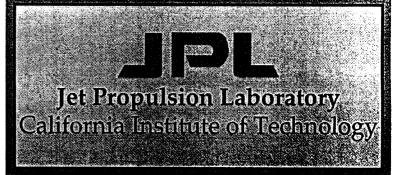
is built using an Engineering Model MISR camera. It is gambled to provide the same view angles as MISR. Flying at 20 km, it produces images which 9 x 11 km in size.

Surface measurements

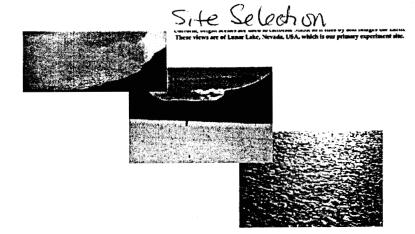
Shown here are the PARABOLA III and Analytical Spectral Devices (ASD) field spectrometer. The PARABOLA acquires continuous samples of radiances, within a 5 degree cone, and covering both the upwelling and downwelling hemispheres. These data have multiple uses. For vicarious calibration, we use the PARABOLA to determine the hemispheric reflectance distribution function (HDRF), or angular reflectance properties of the surface. The ASD samples upwelling only in the nadir view direction, but allows us to do so over a large spatial area, as compared to the stationary PARABOLA.

Capil Bruesse









MISR flies at 705 km and makes use of nine cameras to provide views of the Earth at 0, 36.1, 43.6, 46.8, and 70.3 degrees, both fore and aft of the spaceczaft. It uses 1304 detector elements to sweep out 364 km at a time. The spectral bands are at 466, 556, 677, and 606 mm.





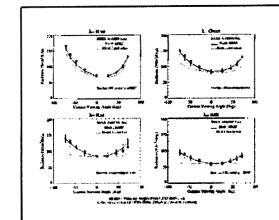
AirMISR to built using an Engineering Model MISK camera. It is gimbaled to provide the same nine view angles as MISR. Flying at 20 km, it produces images which are 9 x

Surface measurements

Shown here are the PARABORA III and Analytical Spectral Devices (ASD) field apertransees. The PARABOLA acquires conditions samples of radiances, within a 5 degree cone, and covering both the upwelling and devaravelling bensiepheres. These data have multiple uses. For vicarious calibration, we use the PARABOLA to detarmain the hemisphesic reflectance distribution function (HDRP), or angluse reflectance properties of the surface. The ASD samples upwelling only in the natio view direction, but allows us to do so over a large spatial area, as compared to the stationary PARABOLA.







Top-ofatmosphere radiance comparison

Shown here in the radiance comparison from the vice-inst calibration calibration experiment of Dovumber 11, 1998. The solid line shows miliances computed using the rection and atmosphesic measurements. The X symbols show the solidance measurements by Airchild R, based upon its laboratory calibration. Agree ment is within a few percent fee most bend and view angles.









Shown, from left to right, are the Reagan sunphotometer, Cimet, and MFRSR maliumstern. The Reagan is used to measure instantaneous total, account, and acrose optical depths. The Cimet and MFRSR instruments allow us to constrain the across phase function and single scatter albeds. An optical depth section is shown for the December 11, 1998 vikarious calibration experiment over Ragner Dry I also, California, USA.

Atmospheric measurements

Summary

Ecoults from the MISR vications calibration experiments will be merged with results using data acquired with the on-board calibration. This will be done considering their uncertainties. It is believed that the MISR on-board calibration is good to within N5 for a 1 algorization confidence. The vications collibration results are uncertaint to 5%, however, they provide an important cross-check, and reduce systematic errors in our overall adulance provides.

This and other MISR validation activities can be tracked on our web site. See http://www.enios.jpl.naos.gov





MISR VICARIOUS

KATER MEARING CACIPINATION

Site selection

Uniform, bright scenes are used to calibrate MISR as it flies by and images the Earth. These views are of Lunar Lake, Nevada, USA, which is our primary experiment site.

MISR

flies at 705 km and makes use of nine cameras to provide views of the Earth at 0, 26.1, 45.6, 60.0, and 70.5 degrees, both fore and aft of the spacecraft. It uses 1504 detector elements to sweep out 364 km at a time. The spectral bands are at 446, 558, 672, and 866 nm.

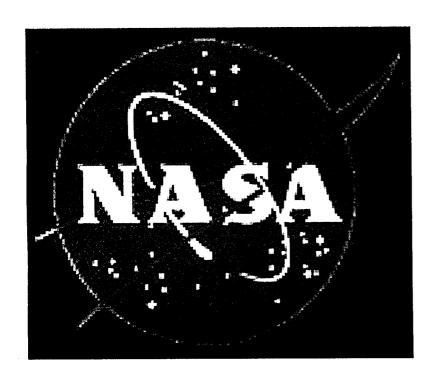
AirMISR

gimbaled is built using an Engineering Model MISR camera. It is gambled to provide the same view angles as MISR. Flying at 20 km, it produces images which 9 x 11 km in size.

Surface measurements

Shown here are the PARABOLA III and Analytical Spectral Devices (ASD) field spectrometer. The PARABOLA acquires continuous samples of radiances, within a 5 degree cone, and covering both the upwelling and downwelling hemispheres. These data have multiple uses. For vicarious calibration, we use the PARABOLA to determine the hemispheric reflectance distribution function (HDRF), or angular reflectance properties of the surface. The ASD samples upwelling only in the nadir view direction, but allows us to do so over a large spatial area, as compared to the stationary PARABOLA.

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JEDL Jet Propulsion Laboratory California Institute of Technology

